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Astrocytomas

Astrocytomas are the most common form of glioma and the most common type of primary brain cancer. These cancers can develop in any part of the central nervous system: the brain, brain stem or spinal cord.

An astrocytoma brain tumor may be further classified into one of the grades shown below. A grade is a determination of how well differentiated the tumor cells look when viewed by a pathologist under a microscope. Cells that are well differentiated mean that they have clear boundaries and structure. They are the least malignant form of cancer. Cells that are not well-differentiated do not have distinct boundaries and are considered to be more aggressive and thus more malignant.

Well-differentiated noninfiltrating astrocytomas

These tumors are slow growing and do not usually invade tissue around them. The cells of these tumors are well differentiated, meaning that their structure is well defined when viewed under a microscope. They are considered a low grade of cancer and offer the best chance to be completely removed during surgery. However, if the tumor is in an inaccessible part of the brain, it can be impossible to remove completely.

Anaplastic astrocytomas

These tumors are referred to as grade III astrocytomas. Their cell structure is less well-differentiated and, as a result, the tumors are more aggressive and more malignant.

Glioblastoma multiforme (GBM)

These tumors are referred to as high grade or grade IV astrocytomas. They are a highly aggressive, highly malignant form of cancer that spreads rapidly into adjoining tissue in the brain. When viewed under a microscope, the cells of this tumor have lost their structure and mitotic figures (dividing cells) are often seen. Other features required to make a diagnosis of GBM are necrotic tissue and newly formed blood vessels within the tumor. Glioblastoma multiforme is the most common type of astrocytoma brain cancer.

Brain Stem Gliomas

These tumors are located in the portion of the brain that connects to the spinal cord. Because they are in a vital area of the brain, they are rarely surgically removable and are much

more common in children than adults.

Cerebellar Astrocytomas

This cancer occurs in the part of the brain called the cerebellum, located above the back of the neck near the brain stem. It is a slow-growing form of cancer that usually does not spread to other parts of the brain. Cystic cerebellar astrocytomas in children are potentially curable by surgery, but diffuse types of tumors in adults are not.

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